

possible to calculate the absolute dates for the reigns of the 12th Dynasty, as the duration of most of the reigns of the kings belonging to this dynasty are preserved on the king list of the Tebtunis Papyrus. On the other hand chronologists are able to compute the reigns of the kings of the 18th dynasty by utilizing the highest dates of their documents and the figures preserved by Manetho. Historians are also helped by the fact

that Egyptians sometimes identified a certain day as "exactly new moon"; they reckoned new moon from the morning after the last crescent of the waning moon had become invisible in the last part before sunrise. As there is a 25-yr lunar cycle, such Ancient Egyptian moon dates could be calculated with a fair amount of certainty but of course only if the Ancient Egyptians themselves observed the celestial phenomenon.

accuracy. There is some doubt. Sometimes even moon data given by the same Papyri^{uses} contradicted themselves. There were faulty or inaccurate observations.

Egypt Chronology ②

the date must be lowered by 20 years (i.e. 1578 BC).

The 3rd Sothis date shows that Sirius rose heliacally sometime during the reign of Thutmose III, which lasted for 54 yrs, on the 28th day of the 11th month; Sothis yr 1458 BC (point of observation at Memphis), or 1438 BC (point of observation at Thebes) must have belonged to the reign of this king. From these dates, it is

translated into present Calendar by multiplying the number of days elapsed since the first day of the year by 4 and subtracting this sum from the date of the beginning of the particular Sothic Cycle. The dates for the start of each Sothic cycle are fortunately known because the Roman historian CENSORINUS fixed the coincidence of New Year's Day and heliacal rising of Sothis in AD 139. Taking into account a slight difference between a Sothic yr. and a yr. of the fixed stars, the years

1322, 2782 and 4242 BC are taken as starting points of a Sothic cycle.

There are 6 Egyptian documents extant giving Sothic dates, but only 3 of these are of value. The oldest is a letter from the town of Kahun warning a priest that the heliacal rising of Sothis will take place on the 16th day of the 8th month of year 7 of a king who according to internal evidence is Sesostrius III of the 12th dynasty. This date corresponds to 1866 BC.

according to the corrected Sothic cycle.
The next date is given by a medical papyrus
written at the beginning of the 18th
dynasty, to which a calendar is added.
Here it is said that the 9th day of the
11th month of yr 9 of King AMENHOTEP I
was the day of the heliacal rising of
Sothis (i.e. 1538 BC). This date however is
only accurate provided that the astronomical
observations were taken at the old residence
of Memphis; if observed at Thebes in Upper
Egypt, the residence of the 18th dynasty.

4242 BC

Egypt
SOTHIC Cycle

Chronologists

As the civil Cal. of the Ancient Egyptians
consisted of 12 months (ea. of 30d) and
5 odd days (called epagomenal days), the
civil yr was a quarter of a day too long
in relation to the rising Sothis, so that
the new yr (rising of Sothis) advanced by
one day every 4 yrs. New yrs. day and
the rising of Sothis coincided again only
after approximately 1,460 yrs, the so
called Sothic cycle. Dated documents
mentioning the rising of Sothis can

adopted by Will Durant
in pages of his Vol. 1.
(His data labelled WIL DUR.
in these cards)

Egypt Cal (contd)

③

calendar. This would require a fresh shortening by 300 or 400 years of the dates assigned above (in the early pages of Will Durant's Vol 1) (and in these cards) for the early dynasties and the Great Pyramids. As the matter is very much in dispute, the Chronology of the CAMBRIDGE ANCIENT HISTORY has been

Since the heliacal rising of SIRIUS occurred
one day later every 4 years than the
Egyptian Cal. demanded, the error
amounted to 365 days in 1460 years.
on the completion of this "SOTHIC CYCLE"
(astro-Egyptians called it) the paper calendar
and the celestial calendar agreed again.
Since we know from the Latin author
CENSORIUS, that the heliacal rising
of SIRIUS coincided in 139 A.D. with
the beginning of the Egyptian Cal.
year, we may presume that a
similar coincidence occurred
every 1460 years previously - i.e.
in 1321 BC, 2781 BC, 4241 BC, etc.
And since the Egyptian Cal. was apparently
established in a year when the heliacal
rising of SIRIUS took place on the 1st day
of the 1st month, we conclude that that
calendar came into operation in a
year that opened a SOTHIC CYCLE.
The earliest mention of the Egyptian Cal.
is in a religious text inserted in
the pyramids of the FIFTH Dynasty

since this dynasty is unquestionably
earlier than 1321 BC, the Calendar
must have been established in
2781 BC. or 4241 BC, or still earlier.
The older date - once acclaimed as
the first definite date in history,
has been disputed by Professor
SCHARFF, and it is possible
that we shall have to accept
2781 BC as the approximate
birthdate of the Egyptian

(EGYPT CAL)
Greek astronomer of Alexandria, by
direction of Julius Caesar, improved this
calendar by adding an extra day
every fourth year. This was the
JULIAN Calendar. ②

Under Pope Gregory XIII (in 1582)
a more accurate correction was made
by omitting this extra day (29 Feb) in
century years not divisible by 400.
This is the Gregorian Cal. that we use
today.

into 3 seasons of 4 months each: ① the rise, overflow and recession of the Nile, ② the period of cultivation and ③ the period of harvesting. To each of these months they assigned 30 days (as being the most convenient approximation to the lunar month of $29\frac{1}{2}$ days). Their word for month like ours, was derived from their symbol for the moon. At the end of the 12th month, they added 5 days to bring the year into harmony with the Nile & the sun.

As the beginning of the year, they chose the day in which the Nile usually reached its height and on which, originally, the great star SIRIUS (which they called (SOTHUS)) rose simultaneously with the sun. Since their calendar showed (or allowed) only 365 (instead of $365\frac{1}{4}$) days to a year, this

"heliacal rising" of SIRIUS (i.e. its appearance just before sunrise, after having been invisible for a number of days) came a day later every 4 years and in this way, the Egyptian calendar diverged by 6 hours annually from the actual calendar of the sky. The Egyptians never corrected this error. Many years later (in 46 BC) the

4241 BC
WILL DURANT - Vol 1
EGYPTIAN CALENDAR

The Egyptians distinguished between planets and fixed stars, noted in their catalogue stars of the fifth magnitude, and charted what they thought were the astral influences of the heavens on the fortunes of men. From these observations, they built the calendar which was another of Egypt's greatest gifts to mankind. They began by dividing the year